

CLAIMS

1. A method of translating an original web page to a text-to-speech enabled web page, the original web page being defined by source code including at least text designated for display, the method comprising:

- (a) parsing the text of the source code designated for display into one or more grammatical units;
- (b) associating a tag with each of the grammatical units;
- (c) associating an event handler with each of the tags, the event handler invokes text-to-speech software code; and
- (d) reassembling the original web page source code with the associated tags and event handlers to form text-to-speech enabled web page source code, wherein when an event associated with an event handler occurs during user interaction with a display of a text-to-speech enabled web page, the text-to-speech software code causes the grammatical unit associated with the tag of the event handler to be automatically spoken.

2. The method of claim 1 wherein the user interacts with the display via a pointing device, and the event is a MouseOver event associated with the pointing device.

3. The method of claim 2 wherein each tag has an active region and the event handler delays invoking the text-to-speech software code until the pointing device persists in the active region of a tag for greater than a preset time period.

4. The method of claim 3 wherein the preset time period is a human perceivable time period.

5. The method of claim 1 wherein the source code further includes one or more images designated for display, one or more of the images including an associated text message, step (c) further comprising associating an event handler that invokes text-to-speech software code with each of the images that have an associated text message, and step (d) further comprising reassembling the original web page source code with the image-related event handlers, wherein when an event associated with an image-related event handler occurs during user interaction with an image in a display of a text-to-speech enabled web page, the text-to-speech software code causes the associated text message of the image to be automatically spoken.

6. The method of claim 1 wherein the grammatical units are sentences.

7. The method of claim 1 wherein the tag is a span tag.

8. The method of claim 1 wherein in step (c), the event handler invokes the text-to-speech software code by calling a JavaScript function that executes text-to-speech software code.

9. The method of claim 1 wherein at least one of the grammatical units is a link having an associated address, the method further comprising:

(e) replacing the associated address of any links with a new address that invokes a software program, the software program retrieving the source code at the associated address and then causing steps (a)-(e) to be repeated for the retrieved source code, wherein the new address becomes part of the text-to-speech enabled web page source code.

10. A method of translating an original document to a text-to-speech enabled document, the original document including at least text, the method comprising:

(a) parsing the text of the original document into one or more grammatical units;

(b) associating a tag with each of the grammatical units;

(c) associating an event handler with each of the tags, the event handler invokes text-to-speech software code; and

(d) reassembling the original document with the associated tags and event handlers to form a text-to-speech enabled document, wherein when an event associated with an event handler occurs during user interaction with a display of a text-to-speech enabled document, the text-to-speech software code causes the grammatical unit associated with the tag of the event handler to be automatically spoken.

11. The method of claim 10 wherein the grammatical units are sentences.

12. A clickless, text-to-speech enabled browser comprising:

(a) a navigation toolbar having a plurality of button graphics, each button graphic including:

(i) a predefined active region;

(ii) an associated text message related to the command function of the button graphic; and

(iii) an event handler that invokes text-to-speech software code for automatically speaking the associated text message and then executing the command function associated with the button graphic; and

(b) a web page region which allows for the display of web pages.

13. The browser of claim 12 wherein a user interacts with the browser via a pointing device, the browser further comprising:

(c) a timer which detects the length of time in which the pointing device is within the active region of a button graphic, wherein the command associated with the button graphic is executed only if the pointing device is within the active region of the button graphic for greater than a preset time period.

14. The browser of claim 13 wherein the preset time period is a human perceivable time period.

15. The browser of claim 13 wherein the preset time period is at least about one second.

16. A method of allowing a user to interact with a web page displayed on a display device, wherein the web page includes one or more grammatical units, each grammatical unit being defined by an active region, the method comprising:

(a) positioning a pointing device over an active region of a grammatical unit, the grammatical unit being automatically highlighted whenever the pointing device is over the active region; and

(b) automatically loading the grammatical unit into a text-to-speech engine, the grammatical unit thereby being automatically spoken, wherein steps (a) and (b) occur sequentially and without requiring any further user manipulation of the pointing device or any other user interfaces associated with display device.

17. The method of claim 16 wherein step (b) occurs only if the pointing device persists in the active region for greater than a preset time period.

18. The method of claim 17 wherein the preset time period is a human perceivable time period.

19. The method of claim 17 wherein the preset time period is at least about one second.

20. The method of claim 16 wherein the grammatical unit is a sentence.

21. The method of claim 16 wherein the pointing device is a mouse.

22. A method of allowing a user to interact with a web page displayed on a display device, wherein the web page includes one or more links that have an associated text message, the method comprising:

(a) positioning a pointing device over a link, the link being automatically highlighted whenever the pointing device is over the link;

(b) automatically loading the associated text message of the link into a text-to-speech engine, the associated text message thereby being automatically spoken; and

(c) automatically navigating to the address of the link, wherein steps (a), (b) and (c) occur sequentially and without requiring any further user manipulation of the pointing device or any other user interfaces associated with display device.

23. The method of claim 22 wherein step (c) occurs only if the pointing device persists over the link for greater than a preset time period.

24. The method of claim 23 wherein the preset time period is a human perceivable time period.

25. The method of claim 23 wherein the preset time period is at least about one second.

26. The method of claim 22 wherein the link is hypertext and the associated text message is the text of the hypertext.

27. The method of claim 22 wherein the link is an image and the associated text message is alternate text of the image.

28. A method of allowing a user to interact with a navigation toolbar of a browser that displays web pages on a display device, the navigation toolbar having a plurality of button graphics, each button graphic including (i) a predefined active region, and (ii) an associated text message related to the command function of the button graphic, the method comprising:

(a) positioning a pointing device over an active region of a button graphic, the button graphic being automatically highlighted whenever the pointing device is over the active region;

(b) automatically loading the associated text message of the button graphic into a text-to-speech engine, the associated text message thereby being automatically spoken; and

(c) automatically initiating the command function of the button graphic, wherein steps (a), (b) and (c) occur sequentially and without requiring any further user manipulation of the pointing device or any other user interfaces associated with display device.

29. The method of claim 28 wherein step (c) occurs only if the pointing device persists over the link for greater than a preset time period.

30. The method of claim 29 wherein the preset time period is a human perceivable time period.

31. The method of claim 29 wherein the preset time period is at least about one second.

32. The method of claim 28 wherein the button graphic is a forward or backward navigation command.

33. An article of manufacture for translating an original web page to a text-to-speech enabled web page, the original web page being defined by source code including at least text designated for display, the article of manufacture comprising a computer-readable medium holding computer-executable instructions for performing a method comprising:

(a) parsing the text of the source code designated for display into one or more grammatical units;

(b) associating a tag with each of the grammatical units;

(c) associating an event handler with each of the tags, the event handler invokes text-to-speech software code; and

(d) reassembling the original web page source code with the associated tags and event handlers to form text-to-speech enabled web page source code, wherein when an event associated with an event handler occurs during user interaction with a display of a text-to-speech enabled web page, the text-to-speech software code causes the grammatical unit associated with the tag of the event handler to be automatically spoken.

34. The article of manufacture of claim 33 wherein the user interacts with the display via a pointing device, and the event is a MouseOver event associated with the pointing device.

35. The article of manufacture of claim 34 wherein each tag has an active region and the event handler delays invoking the text-to-speech software code until the pointing device persists in the active region of a tag for greater than a preset time period.

36. The article of manufacture of claim 35 wherein the preset time period is a human perceivable time period.

37. The article of manufacture of claim 33 wherein the source code further includes one or more images designated for display, one or more of the images including an associated text message, step (c) further comprising associating an event handler that invokes text-to-speech software code with each of the images that have an associated text message, and step (d) further comprising reassembling the original web page source code with the image-related event handlers, wherein when an event associated with an image-related event handler occurs during user interaction with an image in a display of a text-to-speech enabled web page, the text-to-speech software code causes the associated text message of the image to be automatically spoken.

38. The article of manufacture of claim 33 wherein the grammatical units are sentences.

39. The article of manufacture of claim 33 wherein the tag is a span tag.

40. The article of manufacture of claim 33 wherein in step (c), the event handler invokes the text-to-speech software code by calling a JavaScript function that executes text-to-speech software code.

41. The article of manufacture of claim 33 wherein at least one of the grammatical units is a link having an associated address, and the computer-executable instructions perform a method further comprising:

(e) replacing the associated address of any links with a new address that invokes a software program, the software program retrieving the source code at the associated address and then causing steps (a)-(e) to be repeated for the retrieved source code, wherein the new address becomes part of the text-to-speech enabled web page source code.

42. An article of manufacture for translating an original document to a text-to-speech enabled document, the original document including at least text, the article of manufacture

comprising a computer-readable medium holding computer-executable instructions for performing a method comprising:

- (a) parsing the text of the original document into one or more grammatical units;
- (b) associating a tag with each of the grammatical units;
- (c) associating an event handler with each of the tags, the event handler invokes text-to-speech software code; and
- (d) reassembling the original document with the associated tags and event handlers to form a text-to-speech enabled document, wherein when an event associated with an event handler occurs during user interaction with a display of a text-to-speech enabled document, the text-to-speech software code causes the grammatical unit associated with the tag of the event handler to be automatically spoken.

43. The article of manufacture of claim 42 wherein the grammatical units are sentences.

44. An article of manufacture for providing a clickless, text-to-speech enabled browser, the article of manufacture comprising a computer-readable medium holding computer-executable instructions for performing a method comprising:

- (a) a navigation toolbar having a plurality of button graphics, each button graphic including:
 - (i) a predefined active region;
 - (ii) an associated text message related to the command function of the button graphic; and
 - (iii) an event handler that invokes text-to-speech software code for automatically speaking the associated text message and then executing the command function associated with the button graphic; and
- (b) a web page region which allows for the display of web pages.

45. The article of manufacture of claim 44 wherein a user interacts with the browser via a pointing device, the browser further comprising:

- (c) a timer which detects the length of time in which the pointing device is within the active region of a button graphic, wherein the command associated with the button graphic is executed only if the pointing device is within the active region of the button graphic for greater than a preset time period.

46. The article of manufacture of claim 45 wherein the preset time period is a human perceivable time period.

47. The article of manufacture of claim 45 wherein the preset time period is at least about one second.

48. An article of manufacture for allowing a user to interact with a web page displayed on a display device, wherein the web page includes one or more grammatical units, each grammatical unit being defined by an active region, the article of manufacture comprising a computer-readable medium holding computer-executable instructions for performing a method comprising:

(a) positioning a pointing device over an active region of a grammatical unit, the grammatical unit being automatically highlighted whenever the pointing device is over the active region; and

(b) automatically loading the grammatical unit into a text-to-speech engine, the grammatical unit thereby being automatically spoken, wherein steps (a) and (b) occur sequentially and without requiring any further user manipulation of the pointing device or any other user interfaces associated with display device.

49. The article of manufacture of claim 48 wherein step (b) occurs only if the pointing device persists in the active region for greater than a preset time period.

50. The article of manufacture of claim 49 wherein the preset time period is a human perceivable time period.

51. The article of manufacture of claim 49 wherein the preset time period is at least about one second.

52. The article of manufacture of claim 48 wherein the grammatical unit is a sentence.

53. The article of manufacture of claim 48 wherein the pointing device is a mouse.

54. An article of manufacture for allowing a user to interact with a web page displayed on a display device, wherein the web page includes one or more links that have an associated text message, the article of manufacture comprising a computer-readable medium holding computer-executable instructions for performing a method comprising:

(a) positioning a pointing device over a link, the link being automatically highlighted whenever the pointing device is over the link;

(b) automatically loading the associated text message of the link into a text-to-speech engine, the associated text message thereby being automatically spoken; and

(c) automatically navigating to the address of the link, wherein steps (a), (b) and (c) occur sequentially and without requiring any further user manipulation of the pointing device or any other user interfaces associated with display device.

55. The article of manufacture of claim 54 wherein step (c) occurs only if the pointing device persists over the link for greater than a preset time period.

56. The article of manufacture of claim 55 wherein the preset time period is a human perceivable time period.

57. The article of manufacture of claim 55 wherein the preset time period is at least about one second.

58. The article of manufacture of claim 54 wherein the link is hypertext and the associated text message is the text of the hypertext.

59. The article of manufacture of claim 54 wherein the link is an image and the associated text message is alternate text of the image.

60. An article of manufacture for allowing a user to interact with a navigation toolbar of a browser that displays web pages on a display device, the navigation toolbar having a plurality of button graphics, each button graphic including (i) a predefined active region, and (ii) an associated text message related to the command function of the button graphic, the article of manufacture comprising a computer-readable medium holding computer-executable instructions for performing a method comprising:

(a) positioning a pointing device over an active region of a button graphic, the button graphic being automatically highlighted whenever the pointing device is over the active region;

(b) automatically loading the associated text message of the button graphic into a text-to-speech engine, the associated text message thereby being automatically spoken; and

(c) automatically initiating the command function of the button graphic, wherein steps (a), (b) and (c) occur sequentially and without requiring any further user manipulation of the pointing device or any other user interfaces associated with display device.

61. The article of manufacture of claim 60 wherein step (c) occurs only if the pointing device persists over the link for greater than a preset time period.

62. The article of manufacture of claim 61 wherein the preset time period is a human perceivable time period.

63. The article of manufacture of claim 61 wherein the preset time period is at least about one second.

64. The article of manufacture of claim 60 wherein the button graphic is a forward or backward navigation command.